Allergy Abstracts

EDITOR

M. M. ALBERT
Brooklyn

ASSOCIATE EDITORS

M. HARTEN
Brooklyn

H. J. FRIEDMAN
Cleveland

R. A. CHAIT
Brooklyn

ADVISORY EDITOR

M. WALZER
Brooklyn

From the Allergy Division of
The Jewish Hospital of Brooklyn

Volume 9, Number 3 September, 1944

Allergy Abstracts

Asthma and Hay Fever

The Treatment of Asthma With the Roentgen Ray. Kaplan, I. I., and Rubenfeld, S.: Am. J. Roentgenol. **1**: 791, 1943.

Fifty-six patients with asthma received irradiation over the thorax, a uniform technique being employed in all cases. Thirty-six were relieved of their attacks at the end of one series of 600 roentgens. Eight other patients required 700 to 1,800 r. before relief was noted. Relief was mild in five cases, and no improvement at all was obtained in nine cases. Thirteen patients, irradiated over the cervical sympathetic chain, exhibited little or no change in condition. Recurrence of attacks was the rule. The time between the initial relief and recurrence of attacks varied from one to twenty-four months. The longer the period of disease and the more severe the asthma, the more favorable the response to irradiation. Following radiotherapy, aggravation of symptoms frequently preceded improvement. The various theories proposed to explain the influence of irradiation upon the symptoms of bronchial asthma are reviewed.

H.

Recent Developments in Hay Fever Therapy. Edmondson, E. E.: Texas State J. Med. **39**: 479, 1944.

The results of studies done at Emory, Tulane, and Arkansas Universities on the intranasal treatment of hay fever and nasal allergy are presented. Treatment consisted of the insertion, according to a special technique, of cotton tampons soaked in anhydrous cupric and zinc sulfates and a specially processed galvanocolloidal silver. In most cases there was some improvement in symptoms, with decrease in turgescence of the nasal mucous membranes and improvement of the sense of smell. This treatment was not very effective in the control of associated asthmas.

C.

Pollen Studies in Brazil. Pollen Counts in Eleven Brazilian Cities. Greco, J. B.: Rev. med.-cir. do Brazil **52**: 117, 1944.

Because pollen sensitivity was considered uncommon in Brazil, studies were not made until four years ago. There are antigenic pollens in Brazil, but no cases of hay fever have been found among the pure natives. Pollen counts have revealed sufficient pollen to cause hay fever in eleven cities in Brazil. Grass pollens are the main offenders.

The most important grass is *Melinis minutiflora* (capim gordura) and the pollinating season occurs in May and June. There are other pollens in small quantities and of minor clinical significance.

J. L. CORTES.

Observations on the Immunology of Pollen Hay Fever. A Critical Review. Swineford, O.: South. M. J. **37**: 342, 1944.

Four major factors seem to be involved in the immunology of pollen hay fever. They include antigen, sensitizing antibody or reagin, tissue cells, and thermostable or blocking antibody. The avoidance of antigen may be accomplished by various measures, but none of these is entirely effective in preventing hay fever symptoms. The prevention of reagin formation is impossible since the mechanism of reagin production is unknown. However, the relief obtained from coseasonal treatment with small doses of pollen extract is said to be due to a rapid reduction in reagin. Control of the tissue cell factor in hay fever is virtually impossible. The mechanism by which tissue cells participate in the allergic reaction and the type of cells involved are unknown. No effective method has been developed for preventing the union of sensitizing antibody with tissue cells or for freeing it, once it has become attached. Histamine, or H-substance, probably plays an important role in this phase of the reaction. The "blocking antibody" seems to prevent the allergic reaction by preventing the union of antigen and reagin. The control of this factor seems to be the most promising measure in the treatment of hay fever.

A.

Mold Studies in Rio de Janeiro. Passarelli, N., Pinto de Miranda, M., and Castio, C.: Rev. med.-cir. do Brazil **52**: 173, 1944.

Molds are considered important allergens in Rio de Janeiro. Studies were made from May 11, to Sept. 4, 1943. The molds commonly found are penicillium, hormodendron, and aspergillus. Alternaria, which is a common offender in the United States, was rarely found in the authors' studies.

J. L. CORTES.

Dermatology

Cutaneous Absorption. II. The Value of Petrolatum, Anhydrous Wool Fat, and Other Bases in Percutaneous Absorption of Topically Applied Cottonseed Allergen. Walzer, A., and Sack, S. S.: Arch. Dermat. & Syph. **49**: 427, 1944.

Studies were made in humans and in monkeys on the comparative rates of percutaneous absorption of cottonseed suspended in various vehicles. Following their previously described technique, a cutaneous site on each subject was passively sensitized with the serum of a patient

highly sensitive to cottonseed. Cottonseed antigen was then incorporated into the vehicle which was to be studied. A specific amount of the antigen inunctum was then rubbed into the skin elsewhere on the body. The appearance of a reaction at the sensitized site marked the absorption of the antigen.

When petrolatum was employed as the base in human subjects, the average reaction time at the sensitized site was 23.2 minutes after beginning the inunction of the cottonseed ointment. In monkeys, the average absorption time with the same ointment was 9.8 minutes. When anhydrous wool fat was employed as the base, the average absorption time was 19.7 minutes in humans and 7.2 minutes in monkeys. With oil of anise, the average absorption time was 17 minutes in humans and 9.4 minutes in monkeys. In monkeys, the addition of 1 per cent potassium carbonate to the petrolatum base accelerated the absorption of the antigen. Although the palms and soles are generally considered to be poor sites for absorption because of the absence of sebaceous glands, absorption from these areas was demonstrated in these studies with the bases employed. It was concluded from these studies that, from the standpoint of percutaneous absorption in humans, petrolatum and anhydrous wool fat are equally effective ointment bases. In monkeys, however, absorption from anhydrous wool fat is more rapid than from petrolatum, and absorption from oil of anise, although more rapid than from petrolatum, is slower than from anhydrous wool fat.

A.

Specific Cutaneous Allergy to Procaine in Man. Orland, F. J., Flesch, P., and Rothman, S.: Proc. Soc. Exper. Biol. & Med. **56**: 110, 1944.

A series of studies was made on a dentist who developed dermatitis from contact with aqueous solutions of procaine hydrochloride. Contact tests were made with procaine and various related compounds by the drop method. Drops of the solutions were applied to the intact skin and allowed to remain for five minutes. Reactions were read after twenty-four hours. Positive reactions were obtained with procaine and with five other commercial local anesthetics; namely, "pontocaine," "monocaine," "larocaine," "tutocaine," and "butyn." Negative reactions were obtained with p-aminobenzoic acid and b-diethylaminoethanol, the acid and alcohol from which the ester procaine is formed. Many compounds related to procaine were synthesized and tested. Positive reactions were obtained only with compounds containing an aromatic amino group on the benzene ring and only when the amino group was in the paraposition. Passive transfer tests with procaine were negative. It was concluded that, in this case of specific cutaneous allergy to procaine, contact reactions could be elicited only with p-aminobenzoic acid esters which contain a secondary or tertiary amine in the side chain. The length of the side chain did not affect the specificity of the reactions.

A.

Contact Dermatitis Due to Capeweed. Hand, E. A.: Arch. Dermat. & Syph. **49**: 331, 1944.

Capeweed is a member of the daisy family. It resembles the dandelion weed and is prevalent in Australia. It pollinates in the spring and is said to cause about 12 per cent of the hay fever in Australia. Two cases of capeweed dermatitis are reported. The first patient, a 42-year-old private in the Australian army, suffered with hay fever and a severe contact dermatitis on the exposed parts of the body. Patch tests were performed with the stalk, leaf, and flower of capeweed. Only the flower produced a marked positive contact reaction. A generalized exacerbation of the dermatitis followed. Positive passive transfer reactions were obtained with capeweed flower and capeweed pollens. Passive transfer sites, tested with an ether extract of the essential oil of the capeweed plant, gave negative results. The second patient had a dermatitis of the face, eyes, and ears, and gave a history of having slept in a field of capeweed. Patch tests were performed with the flower, stalk, leaf, pollen, and essential oil of capeweed. All gave positive contact reactions of varying degrees. Passive transfer tests with the various parts of capeweed were negative. It is concluded that the first case was one of hay fever and eczema due to hypersensitivity to capeweed pollen, while the second case was a localized dermatitis due to contact with the essential oil of capeweed.

A.

An Unusual Example of Dermatitis Due to Nail Polish. Madden, J. F.: Arch. Dermat. & Syph. **49**: 197, 1944.

An unusual case of nail polish dermatitis involving the face, ears, and neck is reported. A patch test, performed with the offending polish after the dermatitis had subsided, resulted in a relighting of all previous lesions. Two months after recovery, the patient experienced a recurrence despite the fact that she had not used any nail polish during this entire period. After careful questioning, it was discovered that she had slept in the same bed with a friend who had worn nail polish. A repetition of this exposure was suggested and the lesions again reappeared.

A.

Dermatitis of Eyelids. Hazen, H. H.: Arch. Dermat. & Syph. **49**: 253, 1944.

Thirty-six cases of dermatitis of the eyelids were studied. In most of the patients, the upper lids were involved and in about 50 per cent one or both lower lids were also affected. The majority of patients were young females. A careful history was taken in each case and patch tests were performed with suspected contactants. Contact with these was eliminated regardless of the results of the patch tests. It is ap-

parent that the eyelids are much more sensitive than the rest of the skin and may be affected by substances which give negative patch reactions when applied elsewhere on the body. The commonest forms of dermatitis of the eyelids are seborrhea and cosmetic dermatitis. Nail polish was the most frequent offender among cosmetics. Other offending contactants among the thirty-six cases included nail polish, orange peel, carbon paper, wave set lotion, hair dye, face powder, dog hair, cold cream, perfume, and ammoniated mercury.

A.

Skin Reactions to Patch Test With Human Dander. Simon, F. A.: Ann. Allergy **2**: 109, 1944.

Among twelve unselected eczematous infants and children from 5 months to 5 years of age, eight showed positive patch tests with human dander, although scratch and passive transfer tests with this allergen were negative. Among nine cases of atopic eczema in patients from 11 to 26 years of age, none showed positive patch tests to human dander, but seven gave positive scratch and passive transfer tests. Among thirty-seven atopic and nonatopic individuals, including adults, children, and newborns, only one nonatopic child, 4 years of age, showed a positive patch test to dander. A positive patch test consisted of an area of redness, swelling, and numerous, fine, superficial elevations at the site of the test, which had been left on for forty-eight hours. The author discusses the possibility that human dander sensitivity may be the cause of some cases of infantile eczema.

F.

Contact Dermatitis Due to Leg Make-Up. Ellis, F. A.: Arch. Dermat. & Syph. **49**: 197, 1944.

A severe dermatitis extending from the middle of the thighs to the tops of the feet occurred in a 25-year-old white female following the use of leg make-up for a period of three weeks. The right hand also was involved. The symptoms consisted of erythema, edema, pruritus, and confluent dermatitis. The dermatitis disappeared within two weeks following the institution of local therapy. Patch tests were performed with the twelve ingredients of the make-up. A positive reaction was obtained with a red powder known as A.B. Yellow (1-phenylazo-2-naphthylamine).

A.

Human Dander: An Important Cause of Infantile Eczema. Simon, F. A.: J. A. M. A. **125**: 350, 1944.

Human dander is an important cause of infantile eczema. Fifteen of twenty eczematous infants and young children gave positive patch tests to human dander while only one of twenty-three noneczematous

controls gave a positive reaction. Exposure to human dander is universal and is difficult to control. Four cases of eczema were treated by diminishing their exposure to dander. Three showed marked improvement. Typical eczematous lesions were produced on the normal abdominal skins of the four children by briefly rubbing the hair of their mothers on this area twice daily.

F.

Dermatitis From Explosives. Schwartz, L.: J. A. M. A. **125**: 186, 1944.

Dermatitis occurs frequently among persons working with explosives. The author describes the chemical constituents of explosives to which these persons are exposed. Tetryl and trinitrotoluene have been found to be the principal causes of the dermatitis.

F.

Contact Dermatitis From Cold Permanent Waving. Howell, J. B.: Arch. Dermat. & Syph. **49**: 432, 1944.

In the case history described, the patient developed swelling, redness, pruritus, and vesiculation about the ears, neck, and face within twenty-four hours after receiving her first "cold permanent wave." Patch tests were performed on three normal controls with the shampoo, the preliminary lotion, the waving compound, and the neutralizing solution employed in the procedure. The results were negative. Contact tests with these materials on the forearm of the patient, one month after the original dermatitis had healed, gave positive reactions to the preliminary lotion within twenty-four hours after application. The absence of a sensitizing period suggests that the patient had been sensitized to the allergen in the preliminary lotion at some previous time.

A.

Urticaria Produced by Poisonous Caterpillars. D'Ingranni, V.: New Orleans M. & S. J. **96**: 356, 1944.

The author discusses the pathogenesis and etiology of urticaria caused by caterpillars and presents a historical review of the subject. The lesions are produced by the caterpillar hairs, the toxin glands, or by both.

C.

Serum Protein in Dermatoses. Mulvehill, W.: Arch. Dermat. & Syph. **49**: 327, 1944.

Estimations of the total protein, the albumin fraction, and the globulin fraction were made on the sera of patients with pemphigus, dermatitis venenata, atopic eczema, seborrheic dermatitis, pityriasis

rosea, psoriasis, erythema multiforme, and other dermatoses of uncercertain etiology. Only cases with pronounced eruptions were studied. The results revealed no significant changes in total protein, serum albumin, or serum globulin in any of the dermatoses investigated, except pemphigus. In this condition, the serum albumin fraction was low. This finding may be of some value in making a differential diagnosis between pemphigus, dermatitis herpetiformis, and erythema multiforme. A serum albumin level of 3.3 points to a diagnosis of pemphigus.

A.

Otorhinology and Ophthalmology

Clinical Significance of the pH of Superficial Mucous Membranes of the Head. Fabricant, N. D.: Eye, Ear, Nose & Throat Monthly **23**: 219, 1944.

The pH of nasal secretions, measured in situ by means of a glass electrode in conjunction with the Coleman electrometer, was found to fluctuate from approximately 5.5 to 6.5 in a clinically normal nose. Nasal pH also varies with sleep, with rest, diurnally and nocturnally, and can be changed not only by infection, but by emotional factors. The application of ice to the side of the nose produces a drift toward alkalinity; the local application of heat produces a shift towards an acid pH. During the early stages of acute rhinitis, the pH of nasal secretions becomes more alkaline. Similarly, an alkaline status of the nasal secretion is observed during the active stages of allergic rhinitis. Prolonged rest and sleep promote an acid trend in the nasal pH. Since it was found experimentally that drugs with a pH range of less than five induce a noticeable drift downward in the nasal pH, that is, toward acidity, it became evident that nasal vasoconstrictors which can lower the nasal pH from an abnormal alkaline status to a desirably normal acid status may perform a valuable function. Because of the high alkalinity of sodium sulfathiazole solutions, their indiscriminate use in the nose is condemned.

In studies on the throat and buccal cavity, it was found that the normal physiologic range of values for the pH of the throat varies from 4.9 to 8, indicating that the throat normally may be either acid or slightly alkaline.

C.

The Local Use of Sulfonamide in Nasal and Sinus Infection. An Analytical Review. Fabricant, N. D.: Am. J. M. Sc. **206**: 546, 1943.

The published results concerning the local use of sulfonamides in nasal and sinus infection are evaluated. The fact that alkaline preparations of sodium sulfathiazole solutions injure the mucous membrane is sufficient to indict their promiscuous use. The destruction of

cilia, impairment of ciliary function, and the deviation from physiologic nasal pH of such preparations do not justify the indiscriminate use of sodium sulfathiazole preparations in the human nose. There is need for further evidence as to the desirability of combining alkaline sulfathiazole preparations with a nasal constrictor in drugs used indiscriminately. The evidence to date justifies caution in the use of these preparations in the nose and sinuses until nontoxic preparations compatible with nasal physiology are introduced.

C.

Combined Sulfonamide and Bronchoscopic Treatment of Bronchiectasis. Norris, C. M.: J. A. M. A. **123**: 667, 1943.

The concentration of sulfadiazine in bronchial secretions during oral administration was found to be 60 per cent of the blood level. This concentration was not affected by the extent of bronchial disease nor by the amount of expectoration. A 5 per cent suspension of microcrystalline sulfathiazole or sulfadiazine was instilled into the bronchial tree of ten patients with bronchiectasis. Significant concentrations persisted in the bronchial secretion for from twenty-four to forty-eight hours. The concentration was higher in those patients who had little expectoration. Combined sulfonamide and bronchoscopic treatment resulted in a considerable reduction in the daily sputum volume of the patients treated.

C.

Effects of Nasal Inhalers on Erectile Tissues of the Nose. Quantitative Studies. Butler, D. B., and Ivy, A. C.: Arch. Otolaryng. **38**: 309, 1943.

Measurements of nasal obstruction were made by recording the nasal resistance to air before and after the administration of various medicaments by means of nasal inhalers. Two hundred sixty-six tests were performed on eleven normal subjects with various types of amphetine and menthol inhalers. The maximum relief of obstruction occurred fifteen minutes after use of the inhaler. This delay in maximum effectiveness was the same for all formulas studied and probably represents the time needed for the drug to penetrate the mucous blanket of the nasal mucosa and reach the vascular bed. A second factor in the delay is the time which elapses before the vascular musculature contracts completely.

The undesirable effects of menthol were revealed by the studies with menthol inhaler vapors. Menthol, used alone, gives the subjective impression of reduction in nasal obstruction because the drug is an effective topical anesthetic and paralyzes many sensory nerve endings of the nasal mucosa. It stimulates the sensory endings for cold. Thus the

inhaled air feels cool and the subject, who associates cool air with an increase in air flow, gets the impression that his nose is clearer and that the nasal congestion is reduced. The low-output inhaler was found to produce as great a fall in nasal resistance as the high-output inhaler. Various aromatic ingredients of inhalers, other than menthol, were also found to produce pronounced congestion. Pure amphetine was much more effective in relieving nasal congestion than the commercial preparation.

C.

Conjunctivitis and Keratitis of Allergic Origin. Analysis of Fifty-Four Cases. Linhart, W. O.: Arch. Ophth. **31**: 403, 1944.

Fifty-four cases with primary eye complaints were studied. Four had contact dermatitis of the eyelids and fifty had conjunctivitis. No relationship between eosinophilia of the blood and eye smear was found. The chronic recurrent type of conjunctivitis was characterized by a velvety, boggy appearance of the palpebral surface, and the presence of a stringy mucoid discharge. Only three of these patients presented the typical appearance of vernal catarrh. Corneal involvement was observed with the slit lamp in seventeen patients who, on gross examination, seemed to have only conjunctival involvement. The lesions in these patients healed slowly. Positive cutaneous reactions to many allergens were found. Although twenty of these patients had recurrent summer symptoms, pollens were not used for cutaneous testing. Desensitization and local treatment gave good results. The allergens used for desensitization are not mentioned.

C.

Miscellaneous Allergies

Blood Studies in Allergy. II. The Presence in Allergic Disease of Atypical Lymphocytes and Symptoms Suggesting the Recovery Phase of Infectious Mononucleosis. Randolph, T. G., and Gibson, E. B.: Am. J. M. Sc. **207**: 638, 1944.

Atypical lymphocytes, similar to those seen in infectious mononucleosis, have been noted in differential blood counts on allergic individuals. Many of these patients complained of fatigue or weakness, symptoms frequently seen as sequelae of infectious mononucleosis. The fatigue was unrelieved by rest and was often accompanied by drowsiness and, in some cases, by generalized deep pains such as are complained of in the early stages of agranulocytosis. When these symptoms appeared in association with allergic rhinitis, bronchial asthma, and eczema, they were easily identified as allergic in nature. When they occurred with less characteristic allergic conditions, their nature was often unrecognized. Allergy to foods was the most important cause of this train of symptoms. Young adult females comprised the majority of the twenty-

four patients in the group under investigation. Blood studies were carried out by means of total and counting chamber differential counts, using a propylene glycol-aqueous stain. Heterophile antibody determinations were made by the method of Paul and Bennell. Atypical mononuclear cells, which are morphologically similar to the three types of lymphoid cells seen in infectious mononucleosis, were commonly seen in the blood films. Cells resembling the Type III lymphoid cell predominated. The total number of mononuclear cells, ranging from 2 to 27 per cent, never exceeded the polymorphonuclear cells. Counts taken before and after ingestion of a known allergenic food failed to show any significant differences. Toxic granulation of neutrophiles occurred in association with the atypical monocytes, a finding common in infectious mononucleosis. The heterophile antibody studies revealed normal findings in all instances. Only one patient in the series had a past history suggestive of infectious mononucleosis.

F.

Nodal Rhythm and Bundle Branch Block Following Aspirin Hypersensitivity. Bloom, N., and Walker, H.: J. Lab. & Clin. Med. **29**: 595, 1944.

A 50-year-old white male developed symptoms of breathlessness, pain in the right side of the chest, excessive lacrimation, and serous nasal discharge following the administration of 5 grains of aspirin. Similar reactions had been noted by the patient previously. On physical examination the pulse was 110, blood pressure, 110/60, and temperature, 100° F. The electrocardiogram showed a nodal rhythm and bundle branch block. The white blood count was 13,400 with 90 per cent polymorphonuclear leucocytes. The temperature and electrocardiogram were normal the next day and remained so.

H.

An Unusual Case of Quinine Idiosyncrasy. Braun, K., Czertok, J., and Kornbleuth, W.: Tr. Roy. Soc. Trop. Med. & Hyg. **37**: 221, 1943.

A case of quinine idiosyncrasy manifested by hyperpyrexia, diarrhea, abdominal pain, rigor, vomiting, and headache is described. The clinical picture was so characteristic of malaria that quinine was administered, and resulted in aggravation of the symptoms. Patch tests to quinine ointment were positive and the ingestion of quinine was followed by the reappearance of symptoms. This is said to be the second reported case of primary hypersensitivity.

C.

Allergic Headaches. Estiu, M., and Dumm, J. F.: Rev. med.-cir. do Brazil **52**: 33, 1944.

Allergic headaches are considered to be vascular phenomena caused, for the most part, by food allergens. In a series of sixty-eight patients,

it was found that 44.1 per cent had a positive family history of headache and that the condition was transmitted through both parents. Associated with the headache is an "allergic toxemia," in which marked asthenia and mental disturbances, such as loss of memory and somnolence, are pronounced symptoms. In twenty-seven patients, the headaches were worse during the menstrual period. In three of these patients, the elimination of the offending food caused the disappearance of the headache. The authors rule out liver disease as a possible etiologic factor in these headaches.

J. L. CORTES.

Sympathectomy as an Aid in the Relief of Familial Nonreaginic Food Allergy. Coca, A. F.: Ann. Allergy **2**: 213, 1944.

Sympathectomy performed for the relief of hypertension has, in certain cases, failed to reduce blood pressure materially, but has resulted in the loss of such previously existing symptoms as headache, nervousness, and epigastric distress. In view of these results, the author suggested that, in the majority of instances in which sympathectomy has relieved symptoms, the effect was accomplished by some interference with the food-allergic reactions. On the basis of this conclusion, several patients with various complaints attributed to food allergy were subjected to sympathectomies. Several case histories are presented. The operative precedure may result in complete amelioration of some of the symptoms and a diminution in severity of others without the necessity of any dietary restrictions. Some of the foods that previously had caused marked symptoms could be taken without causing any sign of allergic manifestations.

F.

A Statistical Study on the Incidence of Intradermal Tests in 5,000 Allergic Patients. Oliveira Lima, A.: Rev. med.-cir. do Brazil **52**: 7, 1944.

The author reports on the frequency of positive cutaneous reactions obtained when intracutaneous tests were performed on 5,000 allergic patients in Brazil. Among the food allergens, he found the incidence of positive reactions to be as follows: milk, 42.8 per cent; egg, 31.7 per cent; wheat, 28.7 per cent; rice, 12 per cent; bean, 16.6 per cent; tomato, 11 per cent; chocolate, 11.8 per cent; banana, 13 per cent; orange, 12.7 per cent; beef, 12.5 per cent; and pork, 9.1 per cent. Inhalant reactions were also common, pollens and fungi being considered the most important.

J. L. CORTES.

Migraine Due to Milk: Feeding Tests. Wolf, A. A., and Unger, L.: Ann. Int. Med. **20**: 828, 1944.

The authors report a case of migraine with typical prodromal visual symptoms, hemicrania, sensory disturbances, nausea, and vomiting.

The migraine episodes had been recurring weekly or monthly for twenty years. The family history for allergy was positive. An organic cause for the headaches had been ruled out. Feeding tests were instituted because marked dermographism prevented cutaneous testing. A particular food was eliminated from the diet for one week and, on the seventh day, was fed on an empty stomach. Wheat, milk, egg, chocolate, and white potato were tested. Ninety minutes after the feeding test with milk, the patient experienced a severe migraine. Butter also produced an attack. The elimination of milk and milk products resulted in complete disappearance of symptoms. Cutaneous tests with milk and lactalbumin, performed several months later, were positive.

H.

Sensitization to Thiamine Hydrochloride. Report of Another Case. Stein, W., and Morgenstern, M.: Ann. Int. Med. **20**: 826, 1944.

This is the third case of sensitization to thiamine reported in the literature. The patient, a chronic alcoholic, had had thiamine administered parenterally on various occasions. The latest series of injections had been administered at regular intervals. Severe local pruritus and urticaria had occurred following each injection. Fifteen minutes after the eighth injection, a generalized pruritus developed. This was followed by dyspnea, tightness of the chest, and symptoms of shock. The patient became irrational and lost consciousness. Gradual improvement followed the administration of adrenalin and caffeine, although the dyspnea and tightness of the chest persisted. An intracutaneous test with thiamine resulted in a wheal and localized pruritus for six hours. Passive transfer tests were not reported. The authors advise intracutaneous testing for thiamine sensitivity in patients who have received previous treatment with it.

H.

The Relationship of Thromboangiitis Obliterans and Allergy to Tobacco. Experiments With White Rats. Lopez de Faria, J.: Rev. med.-cir. do Brazil **52**: 143, 1944.

The author repeated Harkavy's experiments on the sensitization of rats to tobacco, using denicotinized tobacco grown in Minas Gerais. He injected forty-one rats (twenty-five males and sixteen females) with tobacco extract, and fourteen controls with buffered saline. The animals were under observation for one hundred fourteen days, and received amounts of tobacco extract equal to or in excess of the amounts given in the Harkavy series. No evidence of specific hypersensitiveness was obtained by precipitin and Schultz-Dale tests. No pathologic changes

in the blood vessels of the heart and of the extremities were found. The author admits that his negative findings may be the result of a low antigenicity in the Brazilian tobacco which he used for sensitization.

J. L. CORTES.

Anaphylaxis

The Production of Antibrain Antibodies in the Monkey. Kopeloff, L. M., and Kopeloff, N.: J. Immunol. **48**: 297, 1944.

Organ-specific antibrain antibodies were produced in monkeys by artificial immunization with alcoholic extracts of monkey's brain and sheep's brain by a modified form of Freund's adjuvant-technique. In this procedure, the brain antigen is mixed with a conveyor, such as egg white, horse serum, or hog serum, and incorporated in Aquaphor. Paraffin oil, containing dried, *Micrococcus tuberculosis* or *Micrococcus phlei,* is then added to the Aquaphor mixture. The monkeys received three courses of intramuscular injections of the mixture, each course lasting three weeks. Bleedings were made two weeks after the last injection of each course and at varying intervals thereafter. In control studies, alcoholic extracts of monkey's kidney, sheep's kidney, or monkey's blood were substituted for the brain antigen in the mixture. Some monkeys were immunized with monkey's brain-adjuvant mixture in which the conveyor was replaced by normal monkey's serum. Some animals were injected with alcoholic brain extract alone and conveyor, while others were injected with an alum-precipitated mixture of alcoholic brain extract with conveyor. Serologic studies were made on the sera of treated animals by complement fixation, flocculation, and absorptive tests. The sera of monkeys immunized by the Freund adjuvant-technique showed the presence of complement fixing antibrain antibodies. Absorptive, complement fixation, and flocculation tests were carried out to demonstrate the organ specificity of these antibodies. The serum of one of the animals showing positive results was tested with decreasing concentrations of alcoholic residues of various organs of the monkey, such as brain, testicle, kidney, heart, lungs, liver, spleen, and red blood cells. These flocculation tests revealed cross reactions between brain and testicle and, to a lesser extent, between brain and kidney.

A.

The Effect of Artificially Produced Fever on Anaphylactic Shock in Actively Sensitized Guinea Pigs. Gottschall, R. Y., DeKruif, P., Cope, H. E., and Laurent, D.: J. Lab. & Clin. Med. **29**: 614, 1944.

Fever was artificially produced in sensitized guinea pigs in small, air-conditioned cabinets, in which the heat and humidity regulation and the recording of the rectal and subcutaneous temperatures were auto-

matic. The animals were shocked after the fever had been maintained for variable time periods. Little protection against anaphylactic shock was noted after the animals were subjected to fever up to 108° F. Fever to 109° or to 110° F. produced some protection against anaphylactic shock. The maintenance of a high temperature for thirty minutes gave slightly better protection than shocking the animals immediately after reaching this temperature. Fever for thirty minutes at 108° F. or sixty minutes at 107° afforded the same protection as producing a temperature of 109° or 110° and then shocking the animals. Young guinea pigs (7 weeks old) were much more difficult to protect than old ones (112 weeks old).

H.

Non-Antigenic Property of the Leukocytosis-Promoting Factor of Inflammatory Exudates. Menkin, V.: Proc. Soc. Exper. Biol. & Med. **56**: 219, 1944.

It has been previously demonstrated in animals and in man that there is a leucocytosis-promoting factor in inflammatory exudates. The active principle of this factor is either a pseudoglobulin or is associated with this fraction of exudates. The antigenicity of the leucocytosis-promoting factor, known as leucotaxine, was investigated. Rabbits were injected subcutaneously with the active principle, at intervals of six days, for about four to five weeks. No significant local cutaneous reaction resulted from the injections. Precipitin antibodies for the leucocytosis-promoting factor were not found in the blood of treated animals. A series of guinea pigs was injected with the factor, obtained from dog exudates, in an effort to induce anaphylaxis. A month after the initial subcutaneous injection, a second dose was given intraperitoneally. No signs of anaphylaxis were observed in any of the animals. The results indicated that the leucocytosis-promoting factor of inflammatory exudates is nonantigenic. The leucocytosis-promoting factor may therefore be employed clinically, if necessary, without fear of inducing sensitization to it.

A.

Miscellaneous

The Effect of the Injection of Histamine Into the Brachial Artery on the Permeability of the Capillaries of the Forearm and Hand. Stead, E. A., and Warren, J. V.: J. Clin. Investigation **23**: 279, 1944.

Intra-arterial injection of histamine increases the permeability of the capillaries supplied by that artery. A rapid loss of plasma protein occurs. The hematocrit reading and hemoglobin concentration of blood in the area supplied by the artery are increased, but there is only a slight rise in the protein concentration. This reaction differs from that which occurs in uninjured tissue in the usual types of shock.

F.

Tetanus Toxoid: Its Use in the United States Army. Long, A. P.: Am. J. Pub. Health **33**: 53, 1943.

All military personnel receive a series of three subcutaneous injections of plain tetanus toxoid. The doses are 1 ml. each and are administered at intervals of three weeks. A single stimulating dose of 1 ml. is administered at the end of one year or prior to departure for a theatre of operation. An emergency stimulating dose is administered upon receipt of an injury. At this time, the prophylactic administration of antitoxin is omitted unless there is reason to doubt that the individual had received the initial immunizing series of injections. With earlier toxoid preparations, the reported incidence of allergic reactions following injections was about .05 per cent. This figure fell sharply when tetanus toxoids containing Witte or Berna peptones were discontinued; the frequency of these reactions is now estimated to be less than 1 in 10,000 injections. It is significant that, since June, 1941, when the tetanus immunization program was adopted, only four cases of tetanus have been reported in the entire army and none of these were in immunized individuals. No cases of tetanus have been reported in battle casualties.

H.

Prolongation of Hyperglycemic Effect of Epinephrine in Rabbits by Addition of Zinc Chloride. Foldes, F. F.: Proc. Soc. Exper. Biol. & Med. **56**: 236, 1944.

Zinc chloride, when added to subcutaneously injected medications, prolongs their actions. Rabbits were injected subcutaneously with mixtures of epinephrine and zinc chloride. The hyperglycemic effect of epinephrine was utilized to measure the prolonging action of zinc chloride. The epinephrine content of the mixtures was 0.1 per cent and the zinc concentration varied from .0 per cent to 2 per cent. Injections were made subcutaneously, either in the gluteal region or the nuchal area. Sugar determinations were made on the blood, before and for four hours after the injections. The prolonging effect was found to depend on the zinc concentration of the injected solution and on the site of the injection. Concentrations of zinc which were less than 0.4 per cent produced practically no effect. With increasing concentration of zinc, the prolonging effect increased and reached a maximum at 1.2 per cent. As the concentration increased beyond this point, the prolonging effect diminished and finally disappeared. The hyperglycemic effect was maximal when the injections were made in the gluteal region.

The hyperglycemic effect of epinephrine during the first half-hour following the injection was the same whether epinephrine was administered alone or in combination with zinc chloride. After the first half-hour, the epinephrine-zinc combination caused a greater hyperglycemic effect, the maximum being reached later and lasting longer than after

epinephrine alone. Zinc chloride prolonged the effect of epinephrine by delaying its absorption. The hyperglycemic effect depends for its development on the absorption of the small amounts of epinephrine over a long period of time.

A.

The Effect of Paraffin Oil, Lanolin-Like Substances, and Killed Tubercle Bacilli on Immunization With Diphtheric Toxoid and Bact. Typhosum. Freund, J., and Bonanto, M. V.: J. Immunol. **48**: 325, 1944.

Diphtheric antitoxin formation was investigated in five groups of rabbits. The first group received plain toxoid; the second, alum-toxoid; the third, toxoid combined with Aquaphor; the fourth, toxoid combined with Aquaphor and killed tubercle bacilli; and the fifth, toxoid combined with Aquaphor and paraffin oil containing killed tubercle bacilli. It was found that the adjuvants enhanced antibody formation when combined with soluble antigens, such as diphtheria toxoid. Higher antitoxic titers were induced by alum-toxoid than by plain toxoid, although alum-toxoid failed to sustain antitoxin formation more effectively. When toxoid was mixed with a lanolin-like substance, the combination increased and sustained the antitoxin titers. The addition of killed tubercle bacilli and paraffin oil to the mixture of toxoid and Aquaphor failed to enhance the antigenic properties of the combination.

The effect of adjuvants on the antigenic properties of particulate antigens, such as killed typhoid bacilli, was also investigated in rabbits. The first group received killed typhoid bacilli in saline solution; the second, injections of killed typhoid bacilli combined with Aquaphor and liquid petrolatum; the third, killed typhoid bacilli combined with Aquaphor and liquid petrolatum containing killed tubercle bacilli; the fourth, the same combination as the third, except for the replacement of two-thirds of the liquid petrolatum by a vegetable (peanut) oil; and the fifth, typhoid bacilli suspended in Falba (a lanolin-like substance similar to Aquaphor) and peanut oil. Agglutination titrations were measured in all groups. The results indicated that paraffin oil enhanced and sustained antibody formation against particulate antigens, such as typhoid bacilli, and that the addition of killed tubercle bacilli to the immunizing combination further enhanced antibody formation. Peanut oil did not have the same stimulating effect as petrolatum.

A.